REMARKS/ARGUMENTS

The Present Invention

The present invention is directed to methods of preparing autologous T lymphocytes, compositions comprising the same, and methods of treating a patient having cancer.

The Pending Claims

Claims 1-32 are pending.

Election of Group with Traverse

In order to comply with the requirements of the Patent and Trademark Office, Applicants provisionally elect Group I (claims 1-14) directed to a method of preparing autologous T lymphocytes and a composition comprising the same.

Discussion of the Restriction Requirement

Applicants respectfully traverse the restriction requirement for the reasons set forth below.

There are two criteria for a proper requirement for restriction between patentably distinct inventions: (i) the inventions must be independent or distinct as claimed, and (ii) there must be a serious burden on the Examiner if restriction is not required. MPEP § 803. Consequently, as set forth in MPEP § 803: "If the search and examination of all the claims in an entire application can be made without serious burden, the examiner must examine them on the merits, even though they include claims to distinct or independent inventions."

In the case at hand, the Office has failed to meet the criteria for a proper restriction requirement by not even so much as asserting that there would be a serious burden on the Examiner if restriction were not required.

Moreover, because the instant application is a national stage application under 35 USC 371, the inclusion of more than one invention is permitted if all inventions are so linked

as to form a single general inventive concept (MPEP § 1893.03(d)). Unity of invention exists only when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. "Special technical features," as defined by PCT Rule 13.2, refers to those technical features that define a contribution which each of the inventions, considered as a whole, makes over the prior art.

In the instant case, the special technical feature of the invention of at least claims 1-16 (Groups I and II) is a method of preparing autologous T-lymphocytes for re-introduction into a patient having cancer, which method comprises: (i) obtaining peripheral blood mononuclear cells (PBMCs) from a patient immunized with an antigen of the cancer, (ii) stimulating the PBMCs with the antigen of the cancer in vitro, and (iii) transducing the PBMCs with a retroviral vector, which (a) comprises and expresses a human interleukin-2 (IL-2) coding sequence operably linked to a retroviral promoter, (b) does not comprise an exogenously introduced gene that enables phenotypic selection, and (c) comprises a viral envelope that efficiently transduces CD8+ T-lymphocytes, whereupon autologous T-lymphocytes are prepared for re-introduction into a patient having cancer.. As such, at the very least, the claims of Groups I and II, claims 1-16, should be examined together.

The Office Action contends that there is no special technical feature that defines a contribution over the prior art, since U.S. Patent 5,874,556 (hereinafter the '556 patent) allegedly teaches that IL-2 is a potent mitogen for cytotoxic T lymphocytes, and the combination of antigen and IL-2 causes proliferation of primary CD8+ T cell in vitro. The Office further alleges that the '556 patent teaches that cytotoxic T cells (CTLs) specific to a particular type of tumor can be isolated and administered to a patient having a tumor with the effect that the CTLs ameliorate the tumor. The Office moreover alleges that the '556 patent teaches that T cells with apparent tumor specificity can be isolated from human tumors and that such tumor infiltrating lymphocytes (TILs) have been expanded in vitro and in vivo. The '556 patent, according to the Office, also teaches the introduction of retroviral vectors expressing IL-2 into activated lymphocytes, such as CD8+ CTL, for the reduction of a dependency of the lymphocyte on helper T cells for proliferation.

The Office further contends that Liu et al., *J. Immunol.* 167: 6356-6365 (2001) (hereinafter Liu et al.) teaches retrovirally transducing melanoma reactive human T

lymphocytes with an exogenous human IL-2 gene for the production of T cells which produce IL-2 and which maintain viability after IL-2 withdrawal. The Office Action concludes that, in view of the teachings of the '556 patent and Liu et al., there is no special technical feature that the present invention makes over the prior art.

The Office does not, however, provide evidence that either of the '556 patent or Liu et al. discloses each and every element of claim 1 or of claim 17. The Office does not provide evidence that either the '556 patent or Liu et al. discloses the use of a retroviral vector which does not comprise an exogenously introduced gene that enables phenotypic selection but comprises a viral envelope that efficiently transduces CD8+ T lymphocytes. Therefore, the argument of the Office cannot stand.

In view of the foregoing, at least claims 1-16 are linked by a single inventive concept that is not disclosed by the prior art.

As a second matter, 37 CFR 1.475 (d) states: "If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application *and the first recited invention of each of the other categories related thereto* will be considered as the main invention in the claims, see PCT Article 17 (3) (a) and § 1.476 (c)." Accordingly, in the instant case, the main invention should include at least claims 1-16, since each of these claims is the first recited invention of each of the other categories related to the autologous T lymphocytes produced by the method of claim 1. The relationship between claim 1 and claims 2-16 is evident by the fact that each of claims 2-16 is either directly or indirectly dependent on claim 1.

In view of the foregoing, the main invention should include at least claims 1-16 (Groups I and II). Therefore, at the very least, the claims of the main invention should be examined together.

Similarly, the relationship between claim 17 and claims 18-32 is evident by the fact that each of claims 18-32 is either directly or indirectly dependent on claim 17. In view of the foregoing, the separation of claims 31 and 32 (Group IV) from claims 17-30 (Group III) is improper. Accordingly, the restriction between claims 17-30 and claims 31 and 32 should be withdrawn, such that claims 17-32 should be examined together in one application.

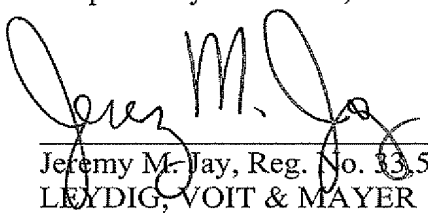
Applicants therefore respectfully request that the Office remove the restriction between Groups III and IV.

Conclusion

Applicants respectfully request withdrawal of the restriction requirement. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

The Commissioner is authorized to charge any extension of time fees pursuant to 37 CFR 1.17(a)-(d) associated with this communication and to credit any excess payment to Deposit Account No. 12-1216. A duplicate copy of this Response is attached.

Respectfully submitted,



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